

We claim:

- 5 1. A heat-insulating coating comprising one or more cholesteric layers and reflecting at least 40%, in particular at least 45%, of the incident radiation in the infrared wavelength range, preferably above 750 nm and, in particular, in the wavelength range from 751 nm to about 2000 nm.
- 10 2. A heat-insulating coating as claimed in claim 1, which transmits at least 80%, in particular at least 90%, of the incident radiation in the wavelength range from about 390 nm to 750 nm.
- 15 3. A heat-insulating coating as claimed in either of the preceding claims, which comprises two or more, preferably from about 2 to 20, and, in particular, from about 2 to 10 cholesteric IR-reflecting layers.
- 20 4. A heat-insulating coating as claimed in claim 3, whose cholesteric layers have mutually different reflection maxima in the wavelength range > 750 nm.
- 25 5. A heat-insulating coating as claimed in any of the preceding claims, which comprises two or more cholesteric layers, preferably a number of cholesteric layers which can be divided by 2, the pitch of the helical superstructures of 2 layers in each case being identical but their handedness
- 30 being different.
6. A heat-insulating coating as claimed in any of the preceding claims which between layers having a helical superstructure
- 35 of identical pitch and identical handedness has a medium which reverses the direction of rotation of the transmitted circularly polarized light, especially what is known as a $\lambda/2$ film or plate.
- 40 7. A heat-insulating coating as claimed in claim 6 which reflects at least 75%, in particular at least 85%, of the incident radiation in the wavelength range above 750 nm, in particular in the wavelength range from 751 nm to about 2000 nm.

8. A heat-insulating coating as claimed in any of the preceding claims, which in the cured state comprises cholesteric compounds or mixtures of compounds selected from
- 5 a) at least one cholesteric polymerizable monomer;
 - b) at least one achiral, nematic, polymerizable monomer and a chiral compound;
 - 10 c) at least one cholesteric crosslinkable polymer;
 - d) at least one cholesteric polymer in a polymerizable diluent or a mixture of polymerizable diluents;
 - 15 e) at least one cholesteric polymer whose cholesteric phase can be frozen in by rapid cooling to below the glass transition temperature; or
 - 20 f) at least one achiral, liquid-crystalline crosslinkable polymer and a chiral compound.
9. A process for producing a heat-insulating coating as claimed in any of the preceding claims, which comprises applying to a transparent substrate at least one cholesteric IR-reflecting layer, curing it, applying, if desired, one or more further cholesteric IR-reflecting layers and, if desired, a medium which reverses the direction of rotation of the transmitted circularly polarized light, curing said layer(s) and so completing the heat-insulating coating.
10. A multicomponent coating system comprising components capable of forming cholesteric layers in accordance with the definition in any of claims 4 to 8.
11. The use of a heat-insulating coating as claimed in any of claims 1 to 8 for producing insulating windows or heat-insulating transparent construction materials or for insulating residential, office or industrial buildings.
12. The use of a heat-insulating coating as claimed in any of claims 1 to 8 in the automotive sector, especially for producing heat-insulating laminated glass screens.

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13. A film, in particular an adhesive film, comprising a heat-insulating coating as claimed in any of claims 1 to 8.

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